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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 09/877,217 | 06/11/2001 | Ikuya Tsunukawa | 206470US-2 | 9559 |
| 22850 | 7590 | 07/13/2005 | | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER ELKASSABGI, HEBA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2834 | |

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

09/877,217

Applicant(s)

TSURUKAWA ET AL.

Examiner

Heba Elkassabgi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9, 12-17 and 20-27 is/are allowed.
- 6) ☒ Claim(s) 10, 11, 18, 19, 28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. The objection in the prior action of the priority documents is withdrawn.

Drawings

The drawing objection is withdrawn in light of applicant's amendment of the specification and possible replacement drawings.

The drawings were received on 05/23/2005. These drawings are acknowledged however; applicant must label the corrected drawings with the heading "Replacement drawing " or "New Sheet". Please see additional information below.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next

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Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 10, 18, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (which will be referred to as APA) and further in view of Kalagidis (US Patent 3777367) and Aoki (US Patent 4037125).

APA disclose in pages 1-4 of the specification a DC motor comprising a rotor with a rotation shaft and rotor coils, a stator configured to apply a magnetic field to the rotor via magnetic poles of the stator opposing magnetic poles of the rotor. In addition, APA discloses a pair of electrode brushes in sliding contact with the contact electrode pad of the commutator at respective sliding contact positions of a different distance from an axis of the rotation shaft and configured to supply electric power to the rotor coils through the commutator. Wherein the respective sliding contact positions of the electrode brushes with the contact electrode part are shifted in a radial direction. However, APA does not disclose electrical parts mounting baseboard and a commutator having a plane conductive layer and each pair of brushes having a first and second separate portions in sliding contact with the commutator.

Kalagidis disclose in the abstract a commutator (C) with a contact electrode part (B) formed with a plane conductive layer pattern (24-26) and connected tot the rotor coils (not shown see abstract), the contact electrode part (B) and the plane conductive layer pattern (24-26) are directly formed on one surface of the electrical parts mounting base board (commutator) in order to improve the method of forming an improved commutator for dynamoelectric machines.

Aoki discloses in figures 1 and 2, a pair of electrode brushes (1) in which each pair of brushes (1) include a first and second separate portions (see figure below) in a

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sliding contact with the contact electrode part of the commutator at respective sliding contact positions of a different distance from an axis of the rotation of the shaft (6) in order to reduce undesired noise by having a stable contact to between the brush and the commutator.

It would have been obvious to one of ordinary skill in the art to combine the DC motor structure of APA with Kalagidis's commutator in order to form an improved commutator for motors and Aoki in order to reduce undesired noise.

2. Claim 11, 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (which will be referred to as APA) and Kalagidis (US Patent 3777367) and Aoki (US Patent 4037125) as applied to claim 10 above, and further in view of Fassel et al. (US Patent 4514670).

APA, Kalagidis, and Aoki disclose the claimed subject matter except for at least one of the sliding brushes to detect a signal on the commutator for operation of the DC motor.

Fassel et al. Disclose in Figure 1 a DC motor (2) in which at least one rotation detecting brush (not shown) is in sliding contact with the contact electrode pad (sensing-resistor 18) of the commutator and configured to detect a signal on the commutator indicative of an operation of the DC motor and that at least one sliding contact position of the detecting means arranged at a different distance in order to have a cycling time or period of the undulation to be reversibly proportioned to the speed of the motor.

It would have been obvious to one of ordinary skill in the art to combine the DC motor structure of APA with Kalagidis's commutator in order to form an improved commutator for motors and the sliding brushes of and Aoki in order to reduce undesired noise and Fassel et al. brush in sliding contact with the contact electrode part in order to have a cycle time or period of the undulation to be reversibly proportioned to the speed of the motor.

Allowable Subject Matter

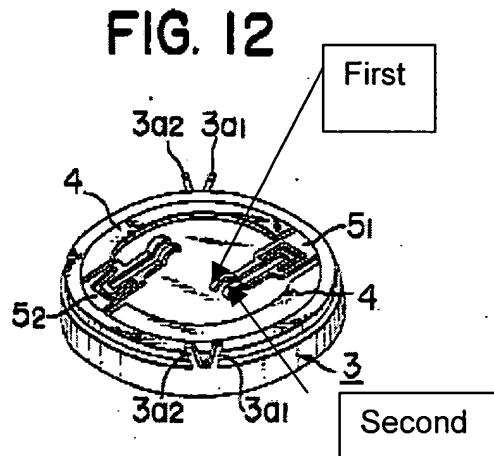
The following is an examiner's statement of reasons for allowance:

Independent claims #1, #12, #20, and #26 are allowed over the prior art which does not disclose a flat disc-shaped electrical parts mounting base board fixed on the rotation shaft such that the rotation shaft perpendicularly intersect the electrical parts mounting base board and such that a first surface of the electrical parts mounting base board faces the rotor. In addition to a commutator having a contact electrode part formed with a plane conductive layer pattern and connected to the rotor coils, the contact electrode part and the plane conductive layer pattern is directly formed on a second flat surface of the electrical parts mounting base board.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to claims 1- 29 have been considered but are moot in view of the new grounds of rejection.



Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is 571-272-2023. The examiner can normally be reached on Weekdays, 9:00 am to 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Heba Elkassabgi

United States Patent and Trademark Office
Patent Examiner- AU 2834
Class 310- Electrical Generator/Motor Structure


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